

Sistemi di 3 eq. in 3 inc.

$$\begin{cases} x - 2y + z = 1 \\ 2x + y - 3z = -2 \\ x + 4y - z = 0 \end{cases}$$

$$\begin{aligned} D &= \begin{vmatrix} 1 & -2 & 1 \\ 2 & 1 & -3 \\ 1 & 4 & -1 \end{vmatrix} = \begin{vmatrix} 1 & -2 \\ 2 & 1 \\ 1 & 4 \end{vmatrix} = \\ &= -1 + 8 - 1 + 12 - 4 = 20 \end{aligned}$$

$$\begin{aligned} D_x &= \begin{vmatrix} 1 & -2 & 1 \\ -2 & 1 & -3 \\ 0 & 4 & -1 \end{vmatrix} = \begin{vmatrix} 1 & -2 \\ -2 & 1 \\ 0 & 4 \end{vmatrix} = \\ &= -1 - 8 + 12 + 4 = 7 \end{aligned}$$

$$D_y = \begin{vmatrix} 1 & 1 & 1 & | & 1 & 1 \\ 2 & -2 & -3 & | & 2 & -2 \\ 1 & 0 & -1 & | & 1 & 0 \end{vmatrix} =$$
$$= 2 - 3 + 2 + 2 = 3$$

$$D_z = \begin{vmatrix} 1 & -2 & 1 & | & 1 & -2 \\ 2 & 1 & -2 & | & 2 & 1 \\ 1 & 4 & 0 & | & 1 & 4 \end{vmatrix} =$$
$$= 4 + 8 - 1 + 8 = 19$$

$$\begin{cases} x = \frac{7}{20} \\ y = \frac{3}{20} \\ z = \frac{19}{20} \end{cases}$$

$$\begin{cases} x - 2y + z = 1 \\ 2x + y - 3z = -2 \\ x + 4y - z = 0 \end{cases}$$

$$\begin{cases} x = 2y - z + 1 \\ 4y - 2z + 2 + y - 3z = -2 \\ 2y - z + 1 + 4y - z = 0 \end{cases}$$

$$\begin{cases} x = 2y - z + 1 \\ 5y - 5z = -4 \\ 6y - 2z = -1 \end{cases}$$

$$\begin{cases} x = 2y - z + 1 \\ -10y + 10z = 8 \\ 30y - 10z = -5 \end{cases}$$

$$20y \quad // \quad = 3$$

$$y = \frac{3}{20}$$

$$z = \frac{6y+1}{2} = \frac{\cancel{3} \cdot \frac{3}{\cancel{20}_{10}} + 1}{2} = \frac{\frac{9}{10} + 1}{2} =$$

$$= \frac{19}{10} \cdot \frac{1}{2} = \frac{19}{20}$$

$$x = 2y - z + 1 = 2 \cdot \frac{3}{20} - \frac{19}{20} + 1 = \frac{7}{20}$$